

FIG. 1

USER'S WIRELESS DEVICE 100

BROWSER 102
UPDATE PRIVACY FEATURES:
(1) UPDATE YOUR PRIVACY PROFILE
(a) Add a local program to permissions list
(b) Remove a local program from list
(c) Add a server program to permissions list
(d) Remove a server program from list
(e) Add a network program to permissions list
(f) Remove a network program from list
(2) UPDATE YOUR PERSONAL DATA
(a) Update server database
(b) Update network database
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1A

USER'S WIRELESS DEVICE 100

BROWSER 102
UPDATE PRIVACY FEATURES:
(3) AUTHENTICATE A PROGRAM
(a) Request program's public key certificate
(b) Verify certificate signatures
(c) Verify validity time
(d) Verify revocation status
(e) Check if certificate authority is on trust list
(f) Flag program as authenticated
(4) REGISTER A PROGRAM
(a) When can the accesses take place
(b) What data can be accessed
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1B

USER'S WIRELESS DEVICE 100

BROWSER 102
MANAGE CONTEXT-ACTIVITY PROFILE:
(1) AUTOMOBILE
(a) day time radio preferences
(b) night time radio preferences
(c) map display preferences
(d) service station preferences
(2) DINING
(a) restaurant preferences
(b) food preferences
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1C

USER'S WIRELESS DEVICE 100

BROWSER 102
MANAGE CONTEXT-ACTIVITY PROFILE:
(3) ENTERTAINMENT
(a) movie preferences
(b) sports preferences
(4) TRAVEL
(a) weather forecasts
(b) airline preferences
(c) hotel preferences
(d) car rental preferences
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1D

USER'S WIRELESS DEVICE 100

BROWSER 102
REQUEST A RECOMMENDATION:
(3) ENTERTAINMENT ACTIVITIES
(a) request movie recommendation
(b) request sports recommendation
(4) TRAVEL ACTIVITIES
(a) request weather forecasts
(b) request airline recommendation
(c) request hotel recommendation
(d) request car rental recommendation
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1F

USER'S WIRELESS DEVICE 100

BROWSER 102
REQUEST A RECOMMENDATION:
(1) AUTOMOBILE ACTIVITIES
(a) request day time radio recommendation
(b) request night time radio recommendation
(c) request map recommendation
(d) request service station recommendation
(2) DINING ACTIVITIES
(a) request restaurant recommendation
(b) request food recommendation
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1E

USER'S WIRELESS DEVICE 100

BROWSER 102
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 2001/05/08/8:00 PM LOCATION: Beale Street, Memphis, TN LIGHT LEVEL - Street Lights /Night AMBIENT TEMPERATURE - 22 C SPEED - ACCELERATION - 0 SERVICE RECOMMENDATIONS: Joe's Beef Barbecue Restaurant Elvis' Place The Blues Diner
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1G

USER'S WIRELESS DEVICE 100

BROWSER 102
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 2001/06/08/7:30 AM LOCATION: Beale Street, Memphis, TN LIGHT LEVEL - Daylight AMBIENT TEMPERATURE - 16 C SPEED - ACCELERATION - 0 SERVICE RECOMMENDATIONS: Pancake Restaurant Great Start Diner Betty's Homestyle Breakfast
KEYPAD 104
POSITIONING SENSOR 122
TOUCH SENSOR 124
COMPASS SENSOR 126
AMBIENT LIGHT SENSOR 128
AMBIENT TEMPERATURE SENSOR 132
THREE-AXIS ACCELERATION SENSOR 134

FIG. 1H

FIG. 2

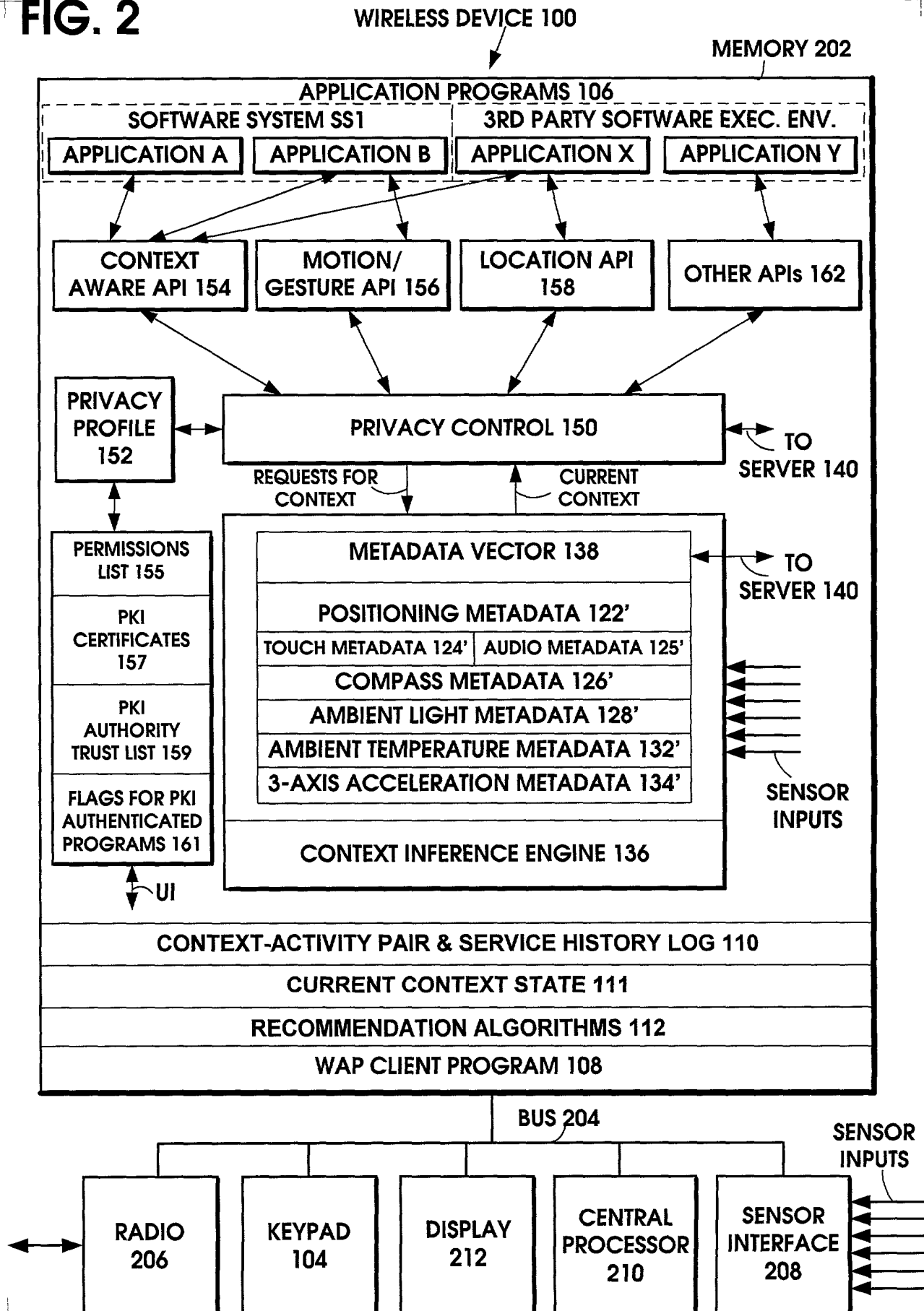


FIG. 2A
USER'S WIRELESS DEVICE 100

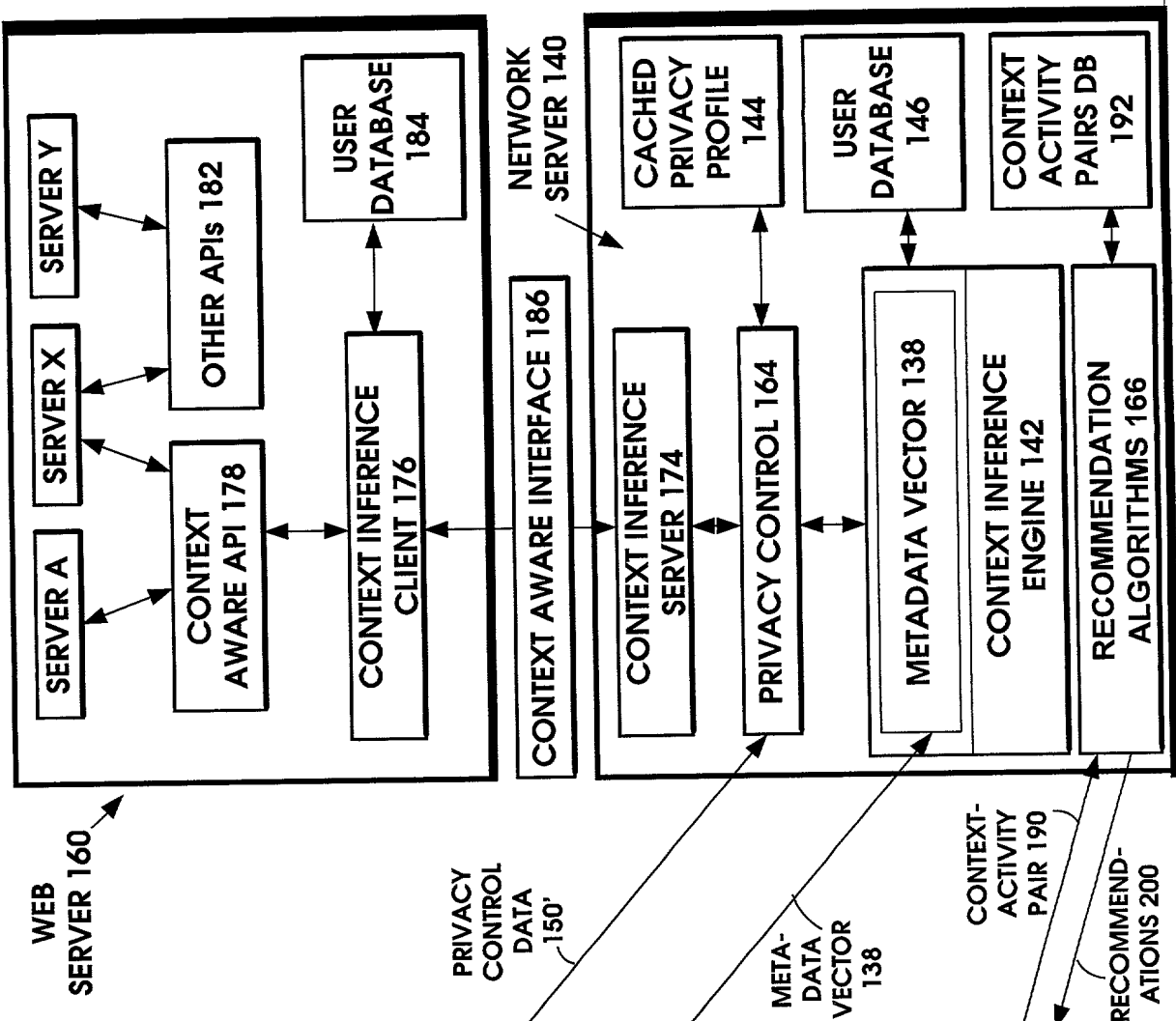
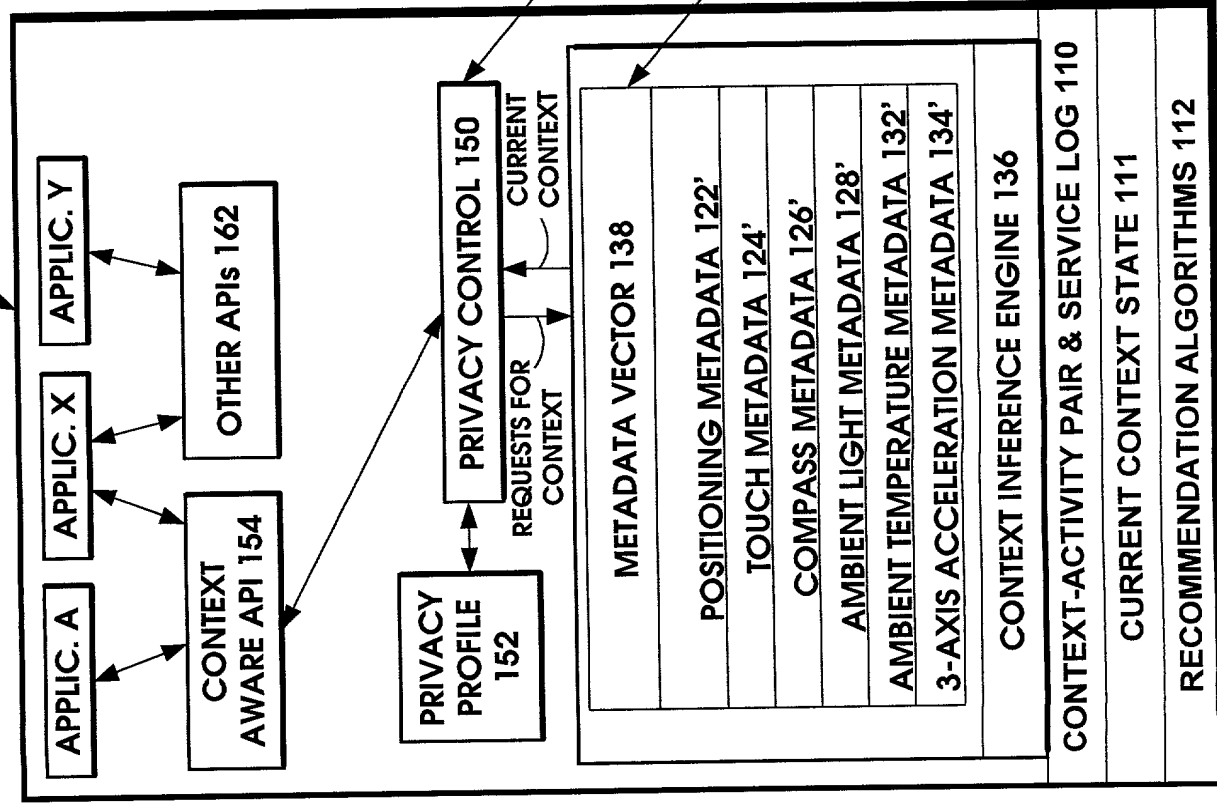


FIG. 2A is a block diagram of a system architecture for a user's wireless device and a network server. The user's wireless device 100 includes applications (A, X, Y) and a context aware API 154. The network server 140 includes servers (A, X, Y) and a context aware API 178. The system also includes a privacy profile 152, a privacy control 150, a current context, a metadata vector 138, a context inference engine 136, a context-activity pair & service log 110, a current context state 111, and recommendation algorithms 112. The network server 140 also includes a cached privacy profile 144, a user database 146, a context activity pairs DB 192, and recommendation algorithms 166. The system is connected via a network 140 and a context aware interface 186. Data flows include privacy control data 150', metadata vector 138, context-activity pair 190, and recommendations 200.

FIG. 3

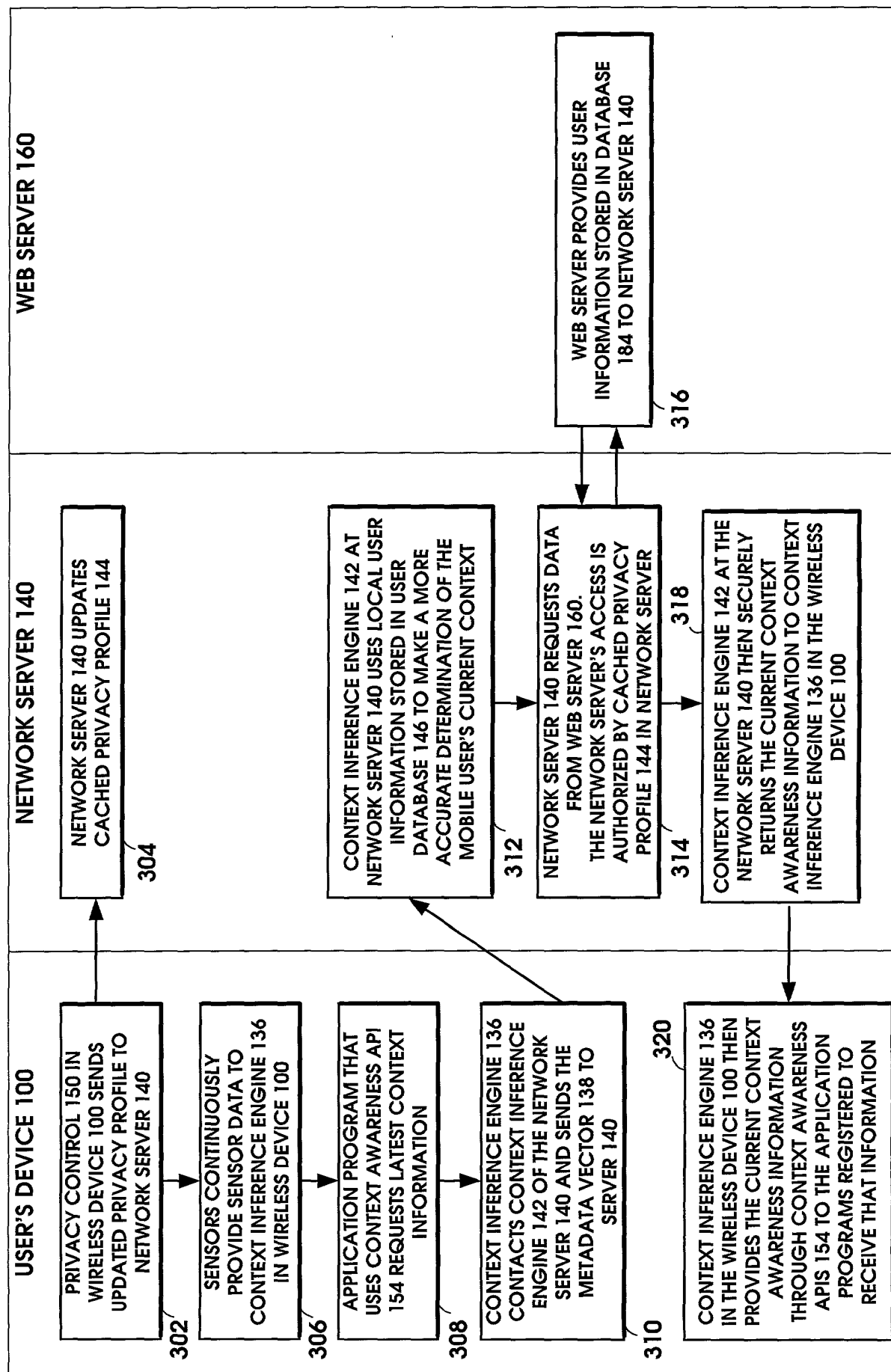


FIG. 3A

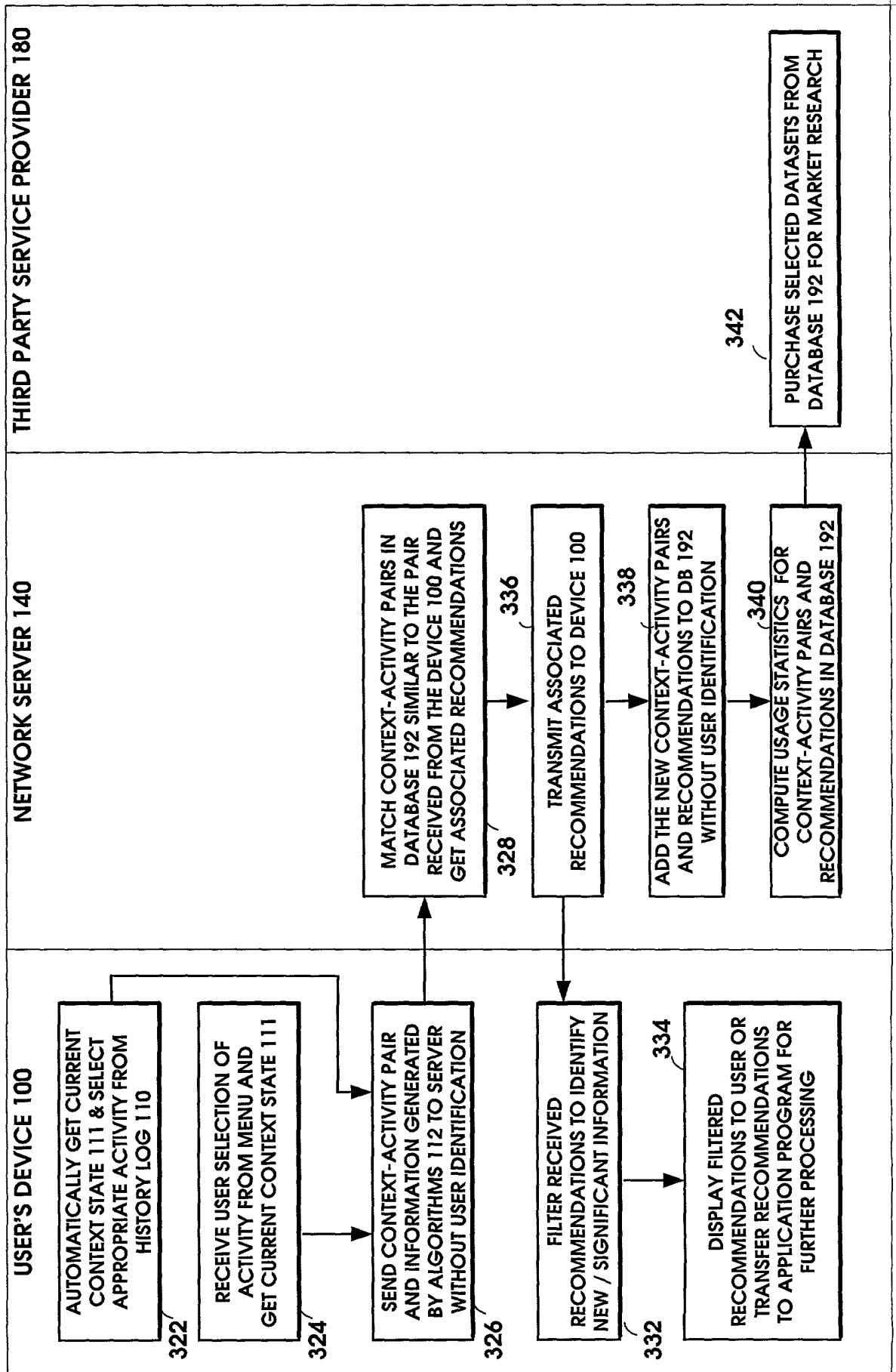


FIG. 3B

CONTEXT-ACTIVITY PAIRS AND SERVICES DATABASE 192 IN SERVER 140		
CONTEXT-ACTIVITY PAIRS	SERVICE RECOMMENDATIONS	NUMBER TIMES RECOMMENDED
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 6:00 PM - 11:59 PM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Night AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	Joe's Beef Barbecue Restaurant	R=20
	Elvis' Place	R=33
	The Blues Diner	R=18
	The Gourmet Restaurant	R=25
	Dan's Fast Food Restaurant	R=40
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 5:00 AM - 10:59 AM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Daylight AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	Pancake Restaurant	R=120
	Great Start Diner	R=100
	Betty's Homestyle Breakfast	R=130
	Mike's Quick Breakfast	R=150
	Dan's Fast Food Restaurant	R=120

FIG. 3C

CONTEXT-ACTIVITY PAIRS AND SERVICE HISTORY LOG 110 IN DEVICE 100			RECEIVE BUFFER IN DEVICE 100
CONTEXT-ACTIVITY PAIR HISTORY	HISTORY OF SERVICES USED	RECOMMENDATIONS FROM SERVER	
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 6:00 PM - 11:59 PM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Night AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	The Gourmet Restaurant (USER'S RATING = 8)	Joe's Beef Barbecue Restaurant	R=20
	Dan's Fast Food Restaurant (USER'S RATING = 6)	Elvis' Place The Blues Diner The Gourmet Restaurant Dan's Fast Food Restaurant	R=33 R=18 R=25 R=40
ACTIVITY: DINING - restaurant CONTEXT: LOCAL TIME: 5:00 AM - 10:59 AM LOCATION: Beale St, Memphis TN LIGHT LEVEL: Daylight AMBIENT TEMPERATURE: 15 C - 25 C SPEED - ACCELERATION: 0 - 50 kph	Mike's Quick Breakfasts (USER'S RATING = 8)	Pancake Restaurant	R=120
	Dan's Fast Food Restaurant (USER'S RATING = 5)	Great Start Diner Betty's Homestyle Breakfast Mike's Quick Breakfasts Dan's Fast Food Restaurant	R=100 R=130 R=150 R=120

FIG. 3D

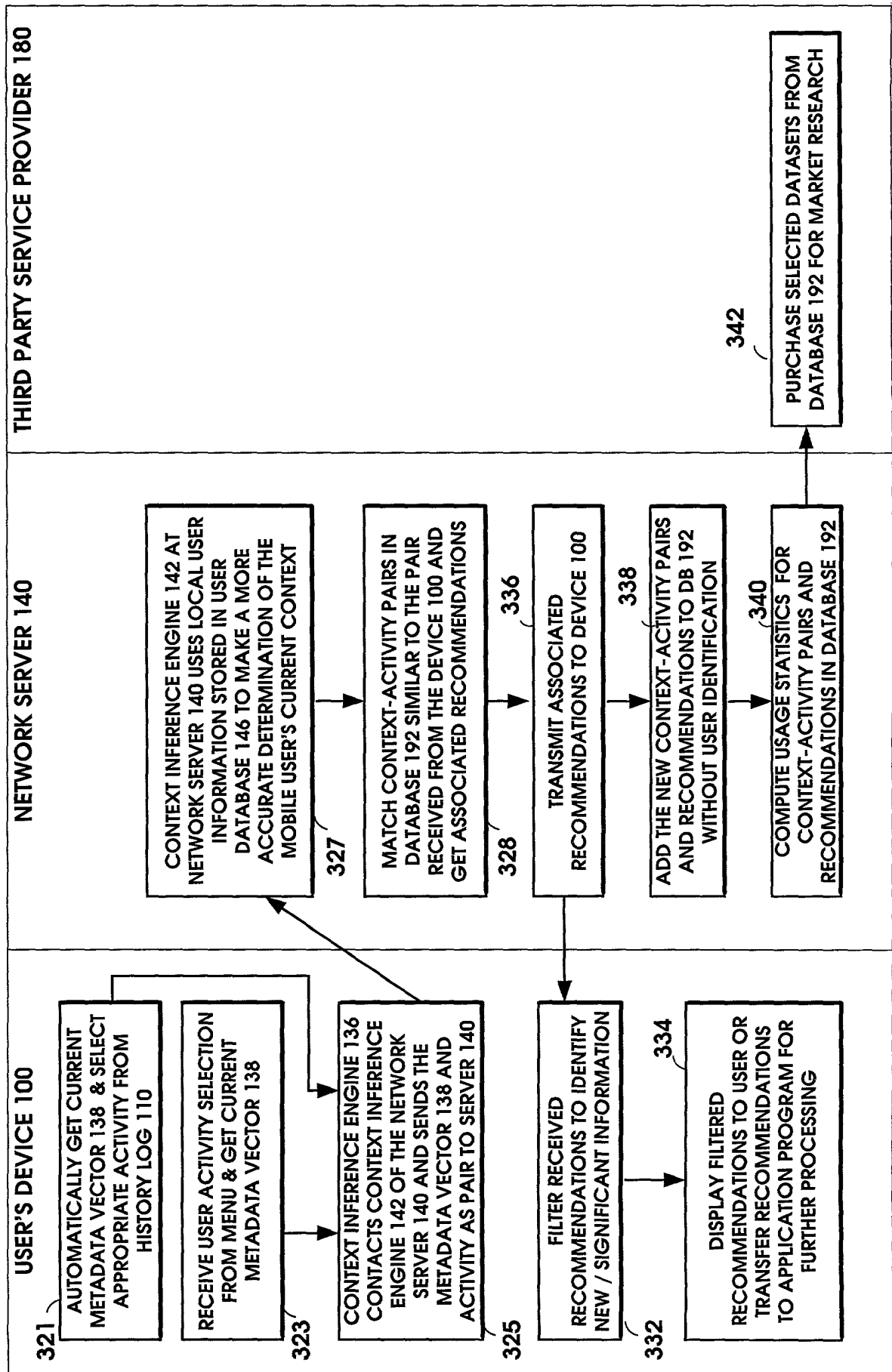


FIG. 3E

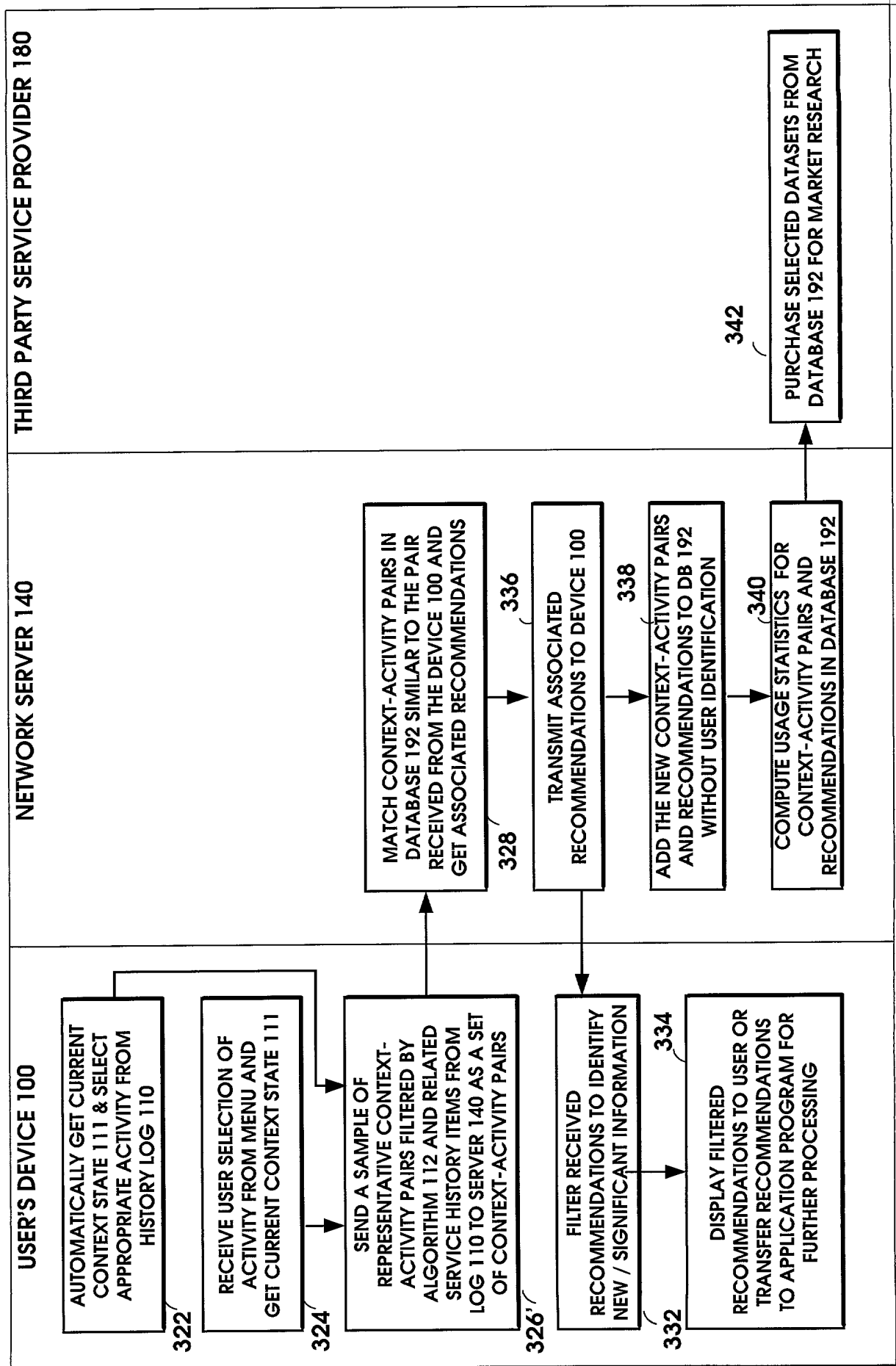


FIG. 4

